

# New Measures for Navy Retention

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# Introduction

- Issue: How to report stay and leave decisions in a form that is useful for Navy leadership and policy decisions?
- Intent is describe our approach and experience in this process as an example.
- Focus on enlisted retention, officer retention measures effort not as far along.
- Many other contributors, particularly Center for Career Development staff: CDR Dave Caldwell, LT Travis Thorp, NCCM Mike Doyle.

# Background

- Existing retention reports were based on 1964 DoD instruction that defined requirements for external reporting.
- Measures were based on individual transaction counts: reenlistments, long term (24 month or more) extensions (LTE) and losses, but not inventories:
  - Retention rate =  $(\text{reenl.} + \text{LTE}) / (\text{reenl.} + \text{LTE} + \text{all losses})$
  - Reenlistment rate =  $(\text{reenl.} + \text{LTE}) / (\text{reenl.} + \text{LTE} + \text{reenl. eligible losses})$
- Measures did not meet Navy needs:
  - Retention rate mixes reenlistment and attrition
  - Reenlistment rate uses unreliable reenlistment eligibility data
  - No direct measure of attrition behavior
  - Navy enlistment contracts caused problem with term of service definitions: some programs require 24 month extension agreements at enlistment
  - Personnel planning and execution monitoring process adopted different measures, no longer comparable
  - Alternative measures proliferated to meet specific needs across the organization
- Fleet developed a separate retention reporting system to meet needs below all Navy level
  - Conflict with all Navy reports
  - Attrition measure, but not useful

# Approach

- Parallel development of new retention measure definitions and a robust information support system
  - Rapid prototyping of proposed measures
  - Resolution of data conflicts with fleet and historical measures to promote internal consistency
  - Historical track for new measures
  - Flexible query capabilities
  - Led to development of a personnel data warehouse with many other uses
- After preliminary work, convened a retention summit with major stakeholders: HQ, Fleets, training, researchers, etc.
  - Additional ideas and considerations
  - Needed consistent measures and capabilities that would meet field as well as all Navy needs
  - Agreement on decisions reached

# Summit Decisions

- Capture retention behavior through separate reenlistment and attrition measures to focus on behaviors of interest
- Base measures on populations “at risk” for decisions as well as observed decisions
- Report behavior by length of service (LOS) ranges rather than number of enlistments
  - Initial obligations can be 2,3,4,5 or 6 years: number of enlistments not clearly tied to LOS dimension used for other analyses
  - Avoids some interpretation problems for LTE tied to initial contracts
  - Chose LOS ranges based on extended Selective Reenlistment Bonus (SRB) zone definitions: 1-6 years, 7-10 years, 11-14 years, 15-19 years and 20+ years
    - Aligns with SRB decisions and planning
    - But still allows multiple decisions within a zone
- All short initial contract (2 and 3 year) active duty Sailors are actually under a reserve contract but should be included.

# Reenlistment Measure Considerations

- Who should be included in reenlistment measure?
  - Those who reach end of their enlistment contract must decide
  - Define those who leave within 90 days of end of active obligated service (EAOS) as losses from the reenlistment at risk population
  - Consistent with various regulations and historical loss patterns
  - Count all reenlistments and LTE not tied to initial enlistment decision
  - But some can reenlist earlier than 90 day window; depending on program and policies, as early as 24 months of service
- Reenlistment Rate = 
$$\frac{\text{Reenlistments} + \text{LTE}}{\text{Reenlistments} + \text{LTE} + \text{EAOS Losses}}$$
- Which organization gets credit for the reenlistment decision?
  - Current duty assignment unit
  - Requires updated organizational tree to aggregate from unit to higher levels

# Attrition Measure Considerations

- Cohort or cross-section attrition?
  - Cohort attrition measures preferred for policy analysis, but not available until the cohort completes the specified period
  - Cross-section attrition measure chosen to meet leadership need for information on current attrition climate
  - Cross-section measure also eases attribution of loss to organization below the all Navy level
- What is the at risk population?
  - Those more than 90 days from EAOS
    - Those not required to make an immediate reenlistment decision
  - Computed as the average strength within the organization over the reporting period
    - At the small unit level, transfers in and out over the reporting period can still cause misleading results

# Attrition Measure

## Considerations (cont.)

- Attrition Rate =  $\frac{\text{Pre-EAOS Losses}}{\text{Pre-EAOS Average Inventory}}$
- Which organization gets credit for a loss?
  - The most recent full duty status station (within the last 90 days)
- But the chosen cross-section attrition measure is not appropriate for pre-fleet (training) activities, particularly boot camp, where assignments are much shorter and a significant portion of early attrition occurs
  - Average strength seriously understates the number at risk; attrition measure would be seriously inflated
  - May continue to use Naval Education and Training Command attrition measures for these activities and Sailors
    - Boot camp cohort attrition
    - Student flow attrition
  - But difficult to roll up training attrition with fleet attrition to get all Navy attrition

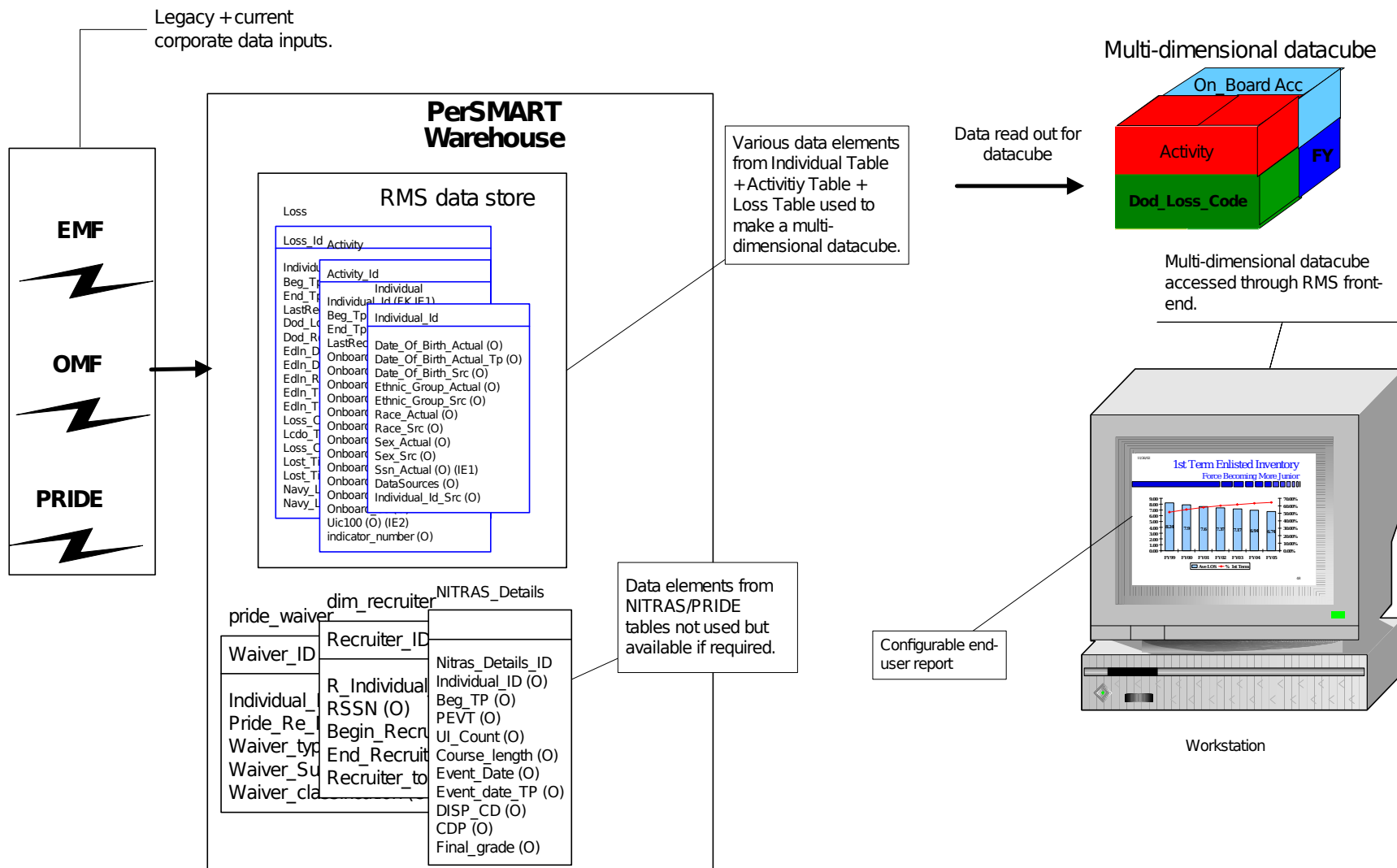


# Parallel Information Support System Development

- Legacy information systems did not provide convenient access to historical data needed to develop new retention measures.
- Early decision to build a data warehouse for required information brought many benefits.
- Incremental approach was useful, allowing a redesign as the data requirements increased.
- Dimensions and data elements should be chosen to include as much future capability as possible, with data populated as needed.

# RMS - PerSMART

data input to information output



# Current Enlisted Retention Reporting Capability

**Retention/Reenlistment/Attrition statistics by  
organizational structure...**

All-Navy	TYCOM	Ship class
Fleet	Squadron	UIC

**...and by any combination of the  
following dimensions:**

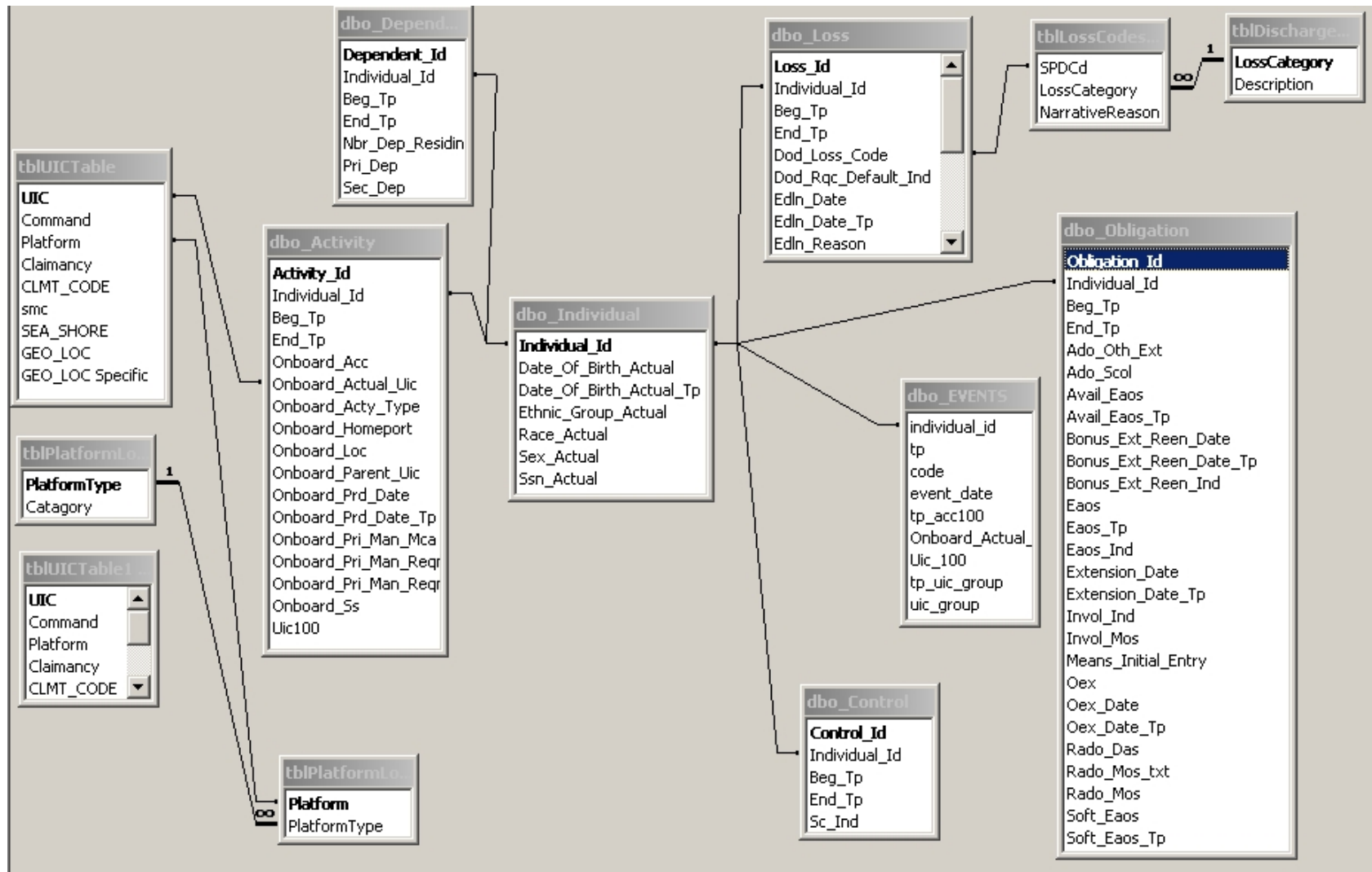
- Gender
- Race/Ethnic
- Pay Grade/LOS
- Zone/Term
- Skill (Rating, EMC)
- Sea/Shore Code
- Quality (AFQT, Education level)
- Marital/Dependency
- Geographic Location
- Organization

# Status and Plans

- New enlisted retention measures have been used for official Navy wide reporting for the last two years, work continues on providing access for Fleets and subordinate units.
- Currently working on developing new officer retention measures.
  - Challenge complicated by more diverse officer career paths and lack of a fixed length service contract
  - Officer retention summit has already been held and new measures proposed
  - Data chosen and populated in data warehouse
  - Specific officer community measures are being developed as well as overall summary measures

Backup

# Simplified Data Model



# PerSMART - System Capabilities

- Contains ~1.5 million records of Sailors who are/have been in Navy since FY 1992
  - Retention/Loss data
  - Demographics/Education/Test Scores
  - Advancement
  - History of Assignments
- 1200GB of source data compressed to 20GB of warehoused data
  - 328 User Tables
  - 261 Stored Procedures
  - 54 Views
- Current system architecture capable of storing 1 Million TB (1 Exabyte) of data
- Extended to PRIDE, NITRAS data

# PERSMART/RMS Current Uses

- SECNAV/CNO retention questions
  - Has provided “official” Navy statistics for last 2 years
- Women in service evaluation and modeling
- Assignment Credit System (ACS) modeling
- ITEMPO Modeling
- Quality of Service comparisons by ship class
- NPRST Survival Analysis
- SRB Management System
- Strength Planning System
- Distribution Incentive Monitoring System